

REMARKS**SUMMARY:**

The present application sets forth claims 1-20, of which claims 1 and 10 are independent claims. Amendments have been previously submitted and requested entry for claims 1 and 10. None of the amendments added any new matter to the subject application.

All claims stand rejected under 35 U.S.C. §103(a) as being allegedly unpatentable over Kulka et al.

Responses to the rejections summarized above are hereafter provided with respect to each individual argument presented by the Examiner.

REJECTION OF CLAIMS 1-20 (35 U.S.C. §103(a)):

Original Claims 1-20 stand rejected under 35 U.S.C §103(a) as being allegedly unpatentable over U.S. Patent No. 6,087,930 (Kulka et al.). Based on the following remarks, Applicants respectfully request reconsideration.

Before setting forth a discussion of the prior art applied in the recent Office Action, it is believed that a further general discussion of the disclosed subject matter may be helpful as background to a discussion of the specifically claimed subject matter.

In general, the present technology is directed toward a mounting patch for mounting electronic assemblies to an inner portion of a tire.

Prior to the present disclosure, tire electronics mounting patches had provided support for a relatively heavy battery mounted together on a circuit board with the tire electronics. Such previous mounting structures needed to be physically robust and typically requiring a nut and bolt arrangement due primarily to the weight of the battery. The present technology provides for moving heavier elements (one or more batteries) at least partially into the mounting patch thereby providing a lower center of gravity than

previous mounting arrangements while separately mounting the remainder of the tire electronics outside the mounting patch.

With reference now in particular to the outstanding rejection of claims 1-20 under 35 U.S.C §103(a) as being allegedly unpatentable over U.S. Patent No. 6,087,930 (Kulka et al.), it should first be noticed that claim 1 as previously presented is directed to “A modular electronic assembly for integration with a pneumatic tire, the tire having an inner liner, the modular electronic assembly comprising ... a mounting patch adapted for fixed positioning on the inner liner of a pneumatic tire ... a power source at least partially embedded in said mounting patch ... and at least one electronic device supported by a substrate, the electronic device and substrate mounted outside the mounting patch, and configured to receive energy from said power source..” Similarly, the only other independent claim, claim 10, as previously presented is directed to “A tire assembly with integrated electronic components for monitoring associated conditions thereof, said tire assembly comprising ... a pneumatic tire having an inner liner ... a support substrate ... at least one condition-responsive device mounted on said substrate ... a modular patch carrying said support substrate ... said modular patch being mounted on the inner liner of said pneumatic tire ... and a power source for supplying energy to said at least one condition-responsive device, wherein said power source is at least partially embedded in said modular patch and said support substrate and said at least one condition-responsive device are positioned outside said modular patch.”

Applicants respectfully submit that Kulka et al. cited by the Examiner in support of the outstanding rejection does not provide the particular aspects currently claimed. More particularly, while Kulka et al. discloses tire sensor arrangements, they do not disclose a tire sensor arrangement wherein the tire electronic are mounted outside the mounting patch while the power supply (battery) is at least partially embedded in the mounting patch.

The recent feedback suggests that “... it would have been obvious to one of ordinary skill in the art at the time the invention was made to mount the electronic

device and substrate outside of the mounting patch, or in any other location as desired, because one of ordinary skill would have readily recognized, that lacking any criticality, changing the location of the components in the system would not have provided a patentable feature to the invention ... (and that) ... this would not have provided an advantage to the overall operation of the system."

Applicants respectfully disagree with the Examiner's conclusion and have already pointed out both in the original specification and their response in the previous Office Action that there is clearly, in the language of the most recent feedback, an "advantage to the overall operation of the system."

A significant aspect to the present technology resides in the location of the power supply (battery) within the mounting patch **to obtain a lower center of gravity** thus having increased mechanical stability and survivability in a tire environment as discussed in the specification at the bottom of page 10 while **at the same time** mounting the electronics **outside** the mounting patch. As may best be seen in Figures 1 and 2 of Kulka et al. his battery power source is encased within a rubber housing **along with** the electronics.

In addition to this aspects of the present invention, the present configuration allows the electronics portion of the tire sensor to be attached to a **replacement mounting patch with a new battery to permit continued usage of the tire electronics**. Alternatively, the two part configuration of the presently claimed subject matter permits mounting of the mounting patch in a tire followed by attachment of the tire electronics. Such sequence **may well be advantageous** if the methodologies used to secure the mounting patch to the inner liner of the tire **might be harmful to the tire electronics**. Kulka et al. does not provide such capability.

The recent Office feedback has provided **no prior art** showing the concept of separately arranging the power supply **within** a mounting patch while positioning related electronics **outside** the mounting patch. Absent a showing of clearly anticipatory prior art alone or in combination with additional prior art that would make obvious such a

configuration, Applicants urge that the claims as presented should be allowable over the art of record.

The recent feedback suggests that Applicants have not established any “criticality” or anything that would have “... provided an advantage ...” to the configuration claimed. Again, as has been pointed out, Applicants respectfully disagree with the positions stated in the recent feedback as Applicants have provided such as set forth herein. Applicants have not simply changed the locations of the system components but rather have intentionally selected certain components (the power supplying battery(ies)) to be housed within the mounting patch while mounting the remaining electronics outside the patch. Moreover, Applicants have explained that such choice is not arbitrary as the batteries are heavier components whereby locating such batteries within the mounting patch with the electronics outside the patch results in a lower center of gravity. Attention is directed to page 5 starting at line 4 of the original specification.

The non-obviousness of presently claimed configuration might be seen more clearly if one were to contemplate for a moment an alternate choice of placing the electronics within the mounting patch while leaving the battery outside the patch so that, for example, one might be able to easily change the battery. Such a choice, given Applicants’ disclosure, would not be advantageous as the higher center of gravity would decrease the mechanical stability of the system and may well result in disconnection of the battery from the electronics because of the harsh tire environment well prior to depletion of the battery.

With respect to claims 2-9 and 11-20: Based on the arguments presented above with respect to claims 1 and 10, Applicants submit that such claims should be allowed over Kulka et al. Since claims 2-9 and 11-20 variously depend from otherwise allowable claims 1 or 10 and further limit same, claims 2-9 and 11-20 should also be allowed. Acknowledgement of the same is earnestly solicited.

CONCLUSION:

Inasmuch as all outstanding issues have been addressed, it is respectfully submitted that the present application, including claims 1-20, is in complete condition for issuance of a formal Notice of Allowance, an action to such effect is earnestly solicited. The Examiner is invited to telephone the undersigned at his convenience should only minor issues remain after consideration of this response in order to permit early resolution of the same or if he has any questions regarding this matter.

Respectfully submitted,

DORITY & MANNING,
ATTORNEYS AT LAW, P.A.

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Date

A handwritten signature in black ink, appearing to read "Harry E. Moose, Jr.", is written over a horizontal line.

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